against Sir Wyville Thomson's course of action, and denounce it as unjust and unpatriotic; and in this protest I am joined, as will be proved shortly, by nearly every scientific man with whom I have communicated. I doubt whether Sir Wyville Thomson is justified by the instructions of the Government regarding the disposal of the Collections; but this question will be settled when the correspondence is moved for in the "House." In conclusion, I wish, in my own name and on behalf of those naturalists who act with me, to express our admiration of the labours of the distinguished men who are mentioned by Mr. A. Agassiz, and our thorough appreciation of his own genius and liberality. We can only regret that these gentlemen have been placed, by no fault of their own, in a position so invidious that they can hardly occupy it conscientiously.

Yours, &c.,

P. Martin Duncan, F.R.S.,

April 20, 1877. *Pres. Geol. Soc.*

On the Modifications undergone by the Ovum of the Phanerocarpal Medusæ *before Fecundation.* By M. A. Giard.

We shall take as a type the ovum of *Rhizostoma Cuvieri*. This fine Medusa is thrown up in great abundance, during the whole autumn, on the beach at Wimereux, together with *Chrysaora hyoscella* and some other Acalephs.

The smallest ova taken from the ovary are formed of a transparent vitellus containing a germinal vesicle and a nucleolus. We do not yet recognize in them any enveloping membrane. As the ovum increases in size its transparency diminishes; the vitellus becomes charged with deutoplasm, and the germinal vesicle less easy to appreciate; at the same time a very delicate vitelline membrane, closely applied to the vitellus, may be distinguished at the periphery. In a later stage the ovum presents at its periphery a series of spherules equally distributed over its whole surface, filled with a perfectly hyaline substance, and separated from the external membrane by a thin layer of granular protoplasm, identical with that which occupies the centre and covers the germinal vesicle. An optical section of the ovum may then be roughly compared to that of a young stem of a plant at the moment of the appearance of the first circle of vascular bundles which divide the parenchyma into three parts—one central, another peripheral, and the third radial (uniting the two former). The hyaline spherules increase rapidly, become tangential to one another, at the same time that they reach the vitelline membrane. Under a low power it appears as if the vitellus were surrounded by a layer of cells which project rectangularly at its periphery. Under a higher power it is seen that the central granular protoplasmic mass is united to the vitelline membrane by a multitude of little columns, widened at their two extremities, like the columns formed in a cavern by the union of the stalactites and stalagmites. These little columns are formed by a less granular protoplasm than that of the centre of the ovum.

Lastly, at the moment when the ovum arrives at maturity, the little columns are ruptured, leaving no traces except slight thickenings of the vitelline membrane at the points where they were attached. We have then, therefore, a central granular mass in which the germinal vesicle is no longer directly observable, and round this mass a transparent zone which separates it from the vitelline membrane.

Prof. Harting has seen, in the ova of *Cyanea Lamarckii* and *C. capillata*, the stage in which the little columns exist * ; but not having completely followed the preceding phases, he has given an erroneous interpretation of the appearances observed. He regards the ova of the *Cyaneæ* as furnished with a vitelline membrane of considerable thickness and pierced with a great number of pores leading from the outside to the interior, such, he says, as are met with in the ovum of some Mammalia, perhaps in all, and also in the ovum of many Teleostean fishes, in which, however, these pores acquire much more considerable dimensions. It is evident that these supposed pores are nothing more than the columns of clearer protoplasm above mentioned. In this way the suppositions of Harting with regard to the physiological function of these pores also fall to the ground. He believed them to serve for the respiration of the ovum, and perhaps also for the passage of the spermatozoids.

The preceding observations were made at Wimereux during the month of September 1875. They are a part of a set of researches, still unfinished, on the development of the Medusæ ; and I have only decided to publish them now because they appear to me to acquire a much greater generality and importance than I at first supposed, in consequence of the magnificent researches of Weismann † on the ovum of the Daphnoideæ.

Weismann has observed a process precisely similar to that just described, in the formation of what he calls the shell (*Schale*) of the winter egg of the genera *Polyphemus*, *Sida*, and *Daphnella*. It is remarkable that, in this case, as in that of the Medusæ, the ovum undergoes a tolerably long incubation in a special medium furnished by the maternal organism.

The excretion of the hyaline vesicles, which takes place all over the periphery of the vitellus of the ovum of *Rhizostoma*, may in other animals be confined to one point of the surface ; the phenomenon would then take on the appearance of the issue of excreted globules. Considering this process, we may inquire whether the phenomenon so often noticed of the rejection of a certain part of the vitellus at the moment of the maturation of the ovum must be regarded as equivalent in all animals in which it has been observed. Bütschli has shown most clearly that the polar corpuscles of the ovum of *Limnæus*, *Succinea*, *Nephelis vulgaris*, and *Cucullanus elegans* originate by the process of cell-division. I may add

* Niederländisches Archiv, Bd. ii. Heft iii.
† Zeitsch. für wiss. Zool. Bd. xxviii. Heft 1 & 2.

that this is the case also in *Salmacina Dysteri* and the *Spirorbes*. In these different animals the excreted corpuscles have the value of *rudimentary cells* having an atavic signification, and cannot properly be called polar corpuscles. This name, on the contrary, applies to the non-cellular materials, which, being rejected by the vitellus, serve for the formation of the accessory organs of the ovum; for example, the shell or the vitelline membrane. Such are the hyaline vesicles of the ovum of *Rhizostoma Cuvieri*.—*Comptes Rendus*, March 19, 1877, p. 564.

Vertigo Moulinsiana, Dupuy.

This interesting and local little land-shell has been lately discovered by Mr. Henry Groves, while botanizing, in a small marsh between Winchester and Southampton. See 'British Mollusca,' i. p. 256, and v. (Suppl.) p. 160. Mr. Groves's specimens are rather more swollen or barrel-shaped than mine from the west of Ireland; and they agree exactly with some Danish specimens, for which I am indebted to the kindness of Dr. Mörch, as well as with the descriptions and figures of Dupuy and Moquin-Tandon. Küster and Kreglinger called it *V. Charpentieri*, after a MS. name given by Shuttleworth. Heyneman described it as *V. ventrosa*, and Westerlund as *Pupa Lilljeborgi*. Dupuy's name (*Moulinsiana*) dates from 1849, and has priority.—J. Gwyn Jeffreys.

Sponges Dredged up on board H.M.S. 'Porcupine' in 1869–70, *Returned. By* H. J. Carter, F.R.S. &c.

By reference to my communication on Sponges dredged up on board H.M.S. 'Porcupine' in 1869–70 ('Annals,' 1876, vol. xviii. p. 226), it will be observed that they were *then* in my possession; and being the property of the Nation, I have now to add what I have done with them, which will be told by the following letter:—

(Copy).

"'The Cottage,' Budleigh-Salterton, Devon.
24th March, 1877.

"My Dear Thomson,—I have this day forwarded to the address you gave me in your letter of the 14th inst., viz. '1 Park Place, Edinburgh' (carriage unpaid, as they came to me), three boxes containing all the Sponge-specimens (both wet and dry), dredged up on board H.M.S. 'Porcupine' in 1869–70, which you sent in 1872, excepting about as much as would fill a hen's egg, which has been chiefly used in their examination.

"I took the boxes (also addressed 'To Scotland *viâ* Midland Railway') to the office of the Bristol and Exeter line in Queen Street, Exeter, *myself*, and saw the clerk write 'Van Rail' on each of them, stating that they would reach their destination on Monday next, which I trust may be the case—and safely, too, as, to insure this, all reasonable care has been taken in packing and addressing them both *outside* and *in*.